AMENDMENTS TO THE CLAIMS

1. (currently amended) In an electronic device, a method comprising the steps of:

providing a graphical model of a dynamic system in a graphical modeling environment that uses information in the graphical model to simulate behavior of the dynamic system over a specified period of time;

grouping a first data signal of a first signal type and a second data signal of a second signal type to form a bus signal in ~~an executable~~ the graphical model, ~~displayed on a graphical user interface, said first signal type specifying a first set of signal attributes that include a first data type or a first data complexity and said second signal type specifying a second set of signal attributes that include a second data type or a second data complexity~~ the first signal type differing from the second signal type in at least one of data type or complexity;

providing the bus signal as input to a non-virtual operation block; and

performing an operation on the bus signal with the non-virtual operation block.

2. (previously presented) The method of claim 1 wherein at least a third data signal is grouped with the first data signal and the second data signal to form a bus signal.

3. (currently amended) The method of claim 2, wherein an outlet of the non-virtual operation block connects to a modified bus signal comprising a modified first data signal, where the modified first data signal represents an output of the operation where the first data signal is an input to the operation, and a modified second data signal, where the modified second data signal represents an output of the operation where the second~~first~~ data signal is~~in~~ an input to the operation.

4. (previously presented) The method of claim 2, wherein the step of performing an operation represented by the non-virtual operation block comprises solving the operation using values represented by the first data signal and the second data signal as inputs to the operation.

5. (canceled)

6. (original) The method of claim 1, further comprising the step of defining one or more physical attributes for the first data signal and the second data signal of the bus signal.

7. (previously presented) The method of claim 2, wherein the bus signal has a structure that is the same at an output port of the non-virtual operation block as at an input port of the non-virtual operation block.

8. (previously presented) The method of claim 1, wherein the operation comprises one of multiplication, division, integration, derivation, a linear transfer function, a delay function, a transfer function specified in terms of poles and zeros, a dead zone function, a switching function, a quantizing function and a rate limiting function on values represented by the first data signal and the second data signal.

9. (canceled)

10. (original) The method of claim 1, further comprising the step of validating a constraint on the bus signal.

11-31. (canceled)

32. (currently amended) A~~In an electronic device, a~~ medium holding computer-executable instructions, the instructions including instructions for ~~a method, comprising the steps of~~:

providing a graphical model of a dynamic system in a graphical modeling environment that uses information in the graphical model to simulate behavior of the dynamic system over a specified period of time;

grouping a first data signal of a first signal type and a second data signal of a second signal type to form a bus signal in ~~an executable~~ the graphical model, ~~displayed on a graphical~~

~~user interface, said first signal type specifying a first set of attributes that include a first data type or a first data complexity and said second signal type specifying a second set of signal attributes that include a second data type or a second data complexity~~the first signal type differing from the second signal type in at least one of data type or complexity;

providing the bus signal as input to a non-virtual operation block; and

performing an operation on the bus signal with the non-virtual operation block.

33. (previously presented) The medium of claim 32, wherein at least a third data signal is grouped with the first data signal and the second data signal to form a bus signal.

34. (previously presented) The medium of claim 33, wherein the step of performing an operation represented by the non-virtual operation block comprises solving the operation using values represented by the first data signal and the second data signal as inputs to the operation.

35. (canceled)

36. (original) The medium of claim 32, further comprising the step of defining a definition for the bus signal.

37. (original) The medium of claim 32, further comprising the step of validating a constraint on the bus signal.

38-41. (canceled)

42. (currently amended) A system for ~~generating~~ executing and displaying a graphical modeling application for simulating behavior of a dynamic system over a specified period of time using information in a graphical model, comprising:

a user-operable input means for inputting data to the application;

a display device for displaying ~~an executable~~ the graphical model representing the dynamic system; and

an electronic device including memory for storing computer program instructions and data, and a processor for executing the stored computer program instructions, the computer program instructions including instructions for performing a non-virtual operation on a bus signal displayed in the graphical model, ~~wherein~~ the bus signal ~~comprises a first data signal of a first signal type and a second data signal of a second signal type grouped together to form the bus signal, said first signal type specifying a first set of signal attributes that include a first data type or a first data complexity and said second signal type specifying a second set of signal attributes that include a second data type or a second data complexity~~ comprising at least two component signals that differ in at least one of data type or complexity.

43-44. (canceled)